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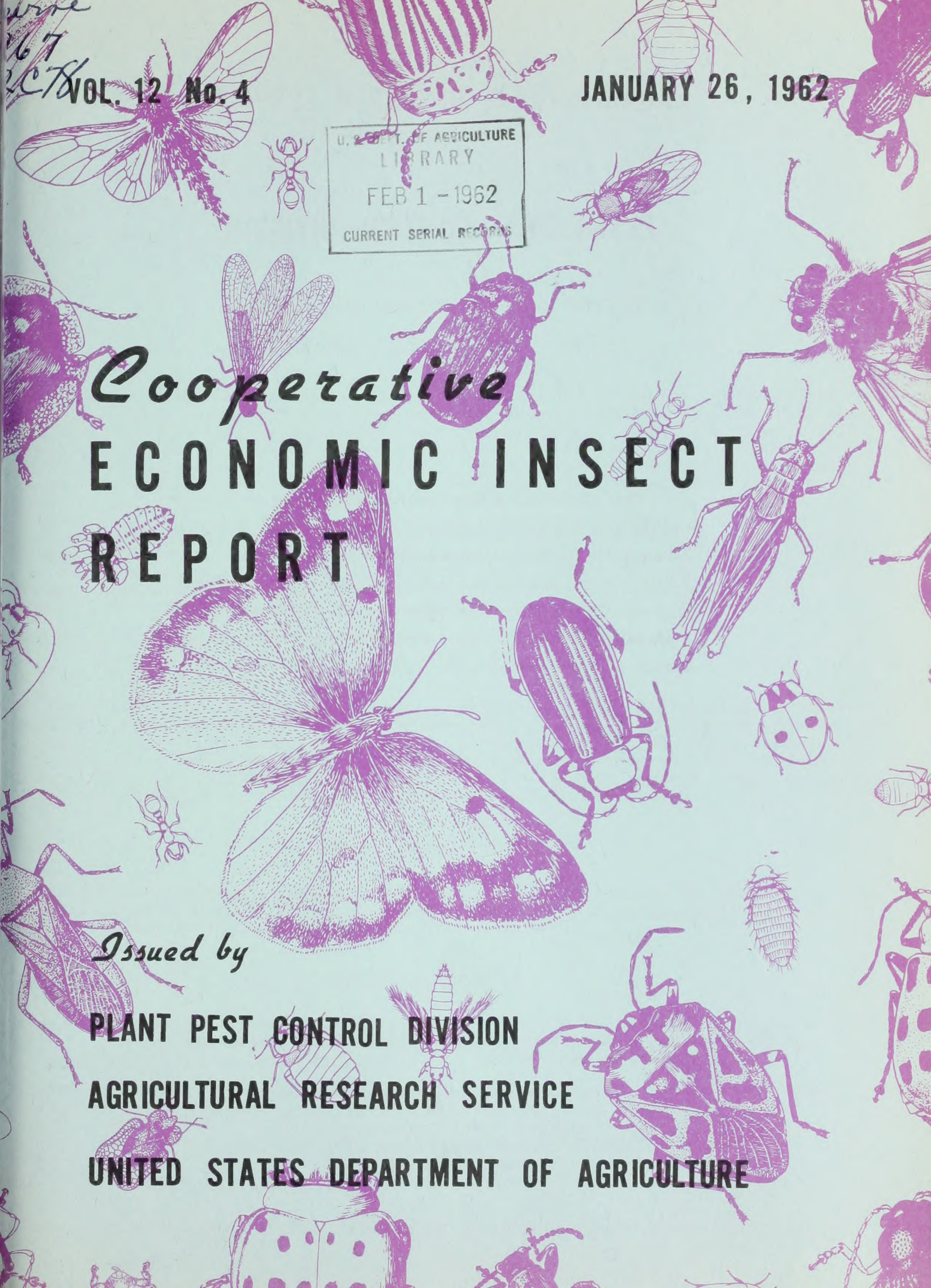

# *Cooperative*
# ECONOMIC INSECT REPORT

*Issued by*

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

# PLANT PEST CONTROL DIVISION

## SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
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Volume 12 January 26, 1962 Number 4

# COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SMALL GRAIN INSECTS generally noneconomic in Texas and Oklahoma. APHIDS building up on barley in Chaves and Eddy Counties, New Mexico. SPOTTED ALFALFA APHID very low in alfalfa in Arizona and not found in Oklahoma. (p. 37). CITRUS RUST MITE dropped to moderate level in Florida citrus groves; however, all districts will continue to have some heavy infestations. Other CITRUS PESTS in Florida below normal abundance or decreasing, with the exception of BLACK SCALE which is not expected to be a problem. (pp. 37-38). VEGETABLE WEEVIL active, but light, on tobacco in the plant bed in several Georgia counties. SOUTHERN PINE BEETLE controls continue in eastern Texas, and WESTERN PINE BEETLE and *Ips* sp. severely damaging ponderosa pines in many locations over Calaveras County, California. (p. 39). Several additional MIMOSA WEBWORM infestations found in Chico, Butte County, California. CATTLE LICE controls continue in Utah, but no damaging populations reported in Oklahoma. (p. 40).

## Miscellaneous Notes of Interest

A CUBAN MAY BEETLE (*Phyllophaga bruneri*) has been collected in blacklight traps at Miami, Florida, as late as December 29, 1961. The adult population appears to be at a low level; however, above date is the latest of the past 3 years. (p. 41). This beetle is known to occur in the United States only in the Miami area of Dade County, Florida. Two STONEFLIES (*Allocapnia rickeri* and *A. granulata*), determined by H. H. Ross, from northwestern Arkansas. (p. 41).

## Insect Detection

A DERMESTID (*Dermestes peruvianus*) collected for first time in Wisconsin at Madison, Dane County (p. 41); and a COCCID (*Aspidiotus britannicus*) recorded for first time in Tuolumne County, California (p. 40).

## Special Reports

Summary of Insect Conditions in some Countries of the Near East and Africa - 1961: Afghanistan (p. 43), Iran (p. 47), Turkey (p. 49), Ethiopia (p. 50), Republic of the Sudan (p. 52) and Libya (p. 55).

Status of the European Corn Borer in Massachusetts in 1961. The average number of borers per 100 plants, based on the fall survey, was 142.3. (p. 37).

Insects not Known to Occur in the United States - Vesperos (*Vesperus* spp.). (pp. 57-58).

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Reports in this issue are for week ending January 19 unless otherwise indicated.

## WEATHER OF THE WEEK ENDING JANUARY 22

Unusually cold weather persisted for the second consecutive week east of the Rockies, and overspread most of the Far West late in the period. The week was much warmer than last week in the South and Southeast, but was still generally 3° to 6° colder than normal. This week was as much as 30° colder than normal in the northern Great Plains and colder than last week in all northern areas. Weekly averages were as much as 10° to 15° below zero in extreme north central areas. Some of the lowest temperatures reported during the week by the various states are as follows: North Dakota, -40°; Minnesota, -42°; Wisconsin, -38°; South Dakota, -33°; Wyoming and Colorado, -30°; Nebraska, -34°; Kansas, -18°; Oklahoma, -4°; Iowa, -26°; Michigan, -24°; Maine, -18°; Washington State, -17°. At the Minneapolis-St. Paul Weather Bureau Airport, the temperature remained at or below zero for 108 consecutive hours. The longest such period of record there was 186 hours in January 1912; the second longest, 143 hours in 1936. Freezing extended to parts of the central Gulf coast early in the period and southward along the Pacific coast to central California over the weekend.

Precipitation, mostly snow, except in extreme southern areas, generally exceeded 0.50 inch from the Ohio and lower Mississippi Valleys to the Atlantic coast, and in many sections of the Far West. Most precipitation in the Northeast fell at the beginning of the week, although there was light snow over the weekend. In the Far West, the heaviest precipitation fell during the latter part of the week during the passage of a vigorous and extensive storm. In California, the storm increased the mountain snowpack by 10 to 30 inches, produced 2 to 3 inches of precipitation along the north coast, and was accompanied by winds of 40 to 60 m.p.h. Also, San Francisco, California, received its first measurable snowfall in many years during the storm. All the Pacific Northwest and Rocky Mountains received significant snowfall from this storm. In Montana, drifting snow blocked several major highways.

At the end of the period, an inch or more of snow covered the ground as far south as southern portions of Kentucky, Missouri, Kansas, Colorado and Utah. A snow cover in San Francisco, California, and vicinity ranged from a trace up to 2 inches. (Summary supplied by U. S. Weather Bureau).

## CEREAL AND FORAGE INSECTS

### Status of European Corn Borer in Massachusetts in 1961

The following is a summary of the 1961 fall European corn borer (Ostrinia nubilalis) survey conducted in 7 counties in the State by the Massachusetts Department of Agriculture, Plant Pest Control Division. (P. C. Kuzmiski).

| County | Acreage | Average per-cent plants infested | Average Number Borers per 100 plants |
|---|---|---|---|
| Bristol | 30.0 | 71 | 275 |
| Essex | 9.25 | 56 | 190 |
| Hampden | 2.0 | 23 | 52 |
| Hampshire | 4.0 | 54 | 144 |
| Middlesex | 52.25 | 53.6 | 117.9 |
| Norfolk | 3.5 | 58.3 | 100.8 |
| Plymouth | 50.0 | 43.5 | 116.4 |
| Total | 151.50 | 359.4 | 996.1 |
| Average | 21.64 | 51.3 | 142.3 |

GREENBUG (Toxoptera graminum) - TEXAS - Cold weather apparently reduced populations previously reported as locally damaging in few west central and northeastern counties. Survey showed pest present in Taylor, Jones, Stonewall, Kent, Dickens and Crosby Counties. Heaviest population found in Dickens County, with 10 per linear foot present. (Texas Coop. Rpt.). OKLAHOMA - Populations remain below economic levels throughout State, due to severe cold and icy conditions. Infestations difficult to locate in fields checked in Garvin, McClain, Cleveland and Oklahoma Counties, especially on late-planted or grazed fields. Low counts also noted in Mayes, Wagoner, Muskogee, Tillman, Jackson and Blaine Counties. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Very low populations observed in some fields with lush growth in south central, southwest and east central areas. (Okla. Coop Sur.).

APHIDS - NEW MEXICO - Populations, probably Rhopalosiphum maidis, building up in fields of barley in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - No reports of damage or of increased infestations received. (Texas Coop. Rpt.). OKLAHOMA - Only light, scattered populations found on wheat in New Castle area of McClain County. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations are very low in alfalfa statewide. (Ariz. Coop. Sur.). OKLAHOMA - Checks in newly planted and overwintering alfalfa were negative. (Okla. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - OKLAHOMA - Checks in newly planted and overwintering alfalfa were negative. (Okla. Coop. Sur.).

## FRUIT INSECTS

Citrus Insect Situation in Florida - Mid-January 1962 - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 58 percent of groves (norm 69 percent); 38 percent economic (norm 45 percent). Statewide population has dropped to moderate level and little change is expected. Mites will be more numerous on leaves than on fruit. All districts will continue to have some heavy infestations. Highest districts are Bartow, west coast and Brooksville. CITRUS RED MITE (Panonychus citri) infested 30 percent of groves (norm 59 percent); 8 percent economic (norm 31 percent). Recent cold weather has dropped population to lowest January level on record. Population will continue in low range. Highest districts are west coast and Brooksville. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 25 percent of groves; 6 percent economic. Population will drop to very low range in all districts and will remain low. PURPLE SCALE (*Lepidosaphes beckii*) infested 80 percent of groves; 12 percent economic. Infestations will become lighter in most areas and very few are expected to be important. Highest district is ridge. FLORIDA RED SCALE (*Chrysomphalus aonidum*) infested 53 percent of groves (norm 54 percent); 7 percent economic (norm 8 percent). Population will continue to be very low through February. Few, if any, infestations will be important. Highest districts are ridge and Indian River. BLACK SCALE (*Saissetia oleae*) continues to be above average abundance but will not be a problem within the next month. (Simanton, Thompson, Johnson (Citrus Expt. Sta., Lake Alfred).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - FLORIDA - None taken in routine trapping. Trapping in northern portion of State revealed no insects of any type. Traps operated in central area caught few insects, while traps in southern part of State continue to lure average number of miscellaneous insects for season. (Fla. Coop. Sur.). MEXICO - In states of Chiapas, Sinaloa and Sonora, 1,553 traps were in service at close of December; all trap inspections were negative. (PPC, Mex. Reg.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - Trapping was negative during harvesting of 1961-1962 citrus crop, although numerous other species of *Anastrepha* were collected. First adult *A. ludens* of the season, a nongravid female, was trapped in Hidalgo County on December 6, about 2 weeks earlier than first find of last season. (PPC, So. Reg.). CALIFORNIA - Trapping activities were continued in San Diego County during December, with negative results. Larval inspections of orange, guava avocado, pear and pomegranate made on 6 properties were also negative. (PPC, West. Reg.). MEXICO - In states of Baja California and Sonora, 5,298 inspections were made of 1,509 traps located on 749 properties. No *A. ludens* were taken. In Municipio Hermosillo, Sonora, 55 fallen host fruits were inspected on one property, with no larvae found. (PPC, Mex. Reg., Dec. Rpt.).

A FRUIT FLY (*Anastrepha interrupta*) - FLORIDA - Collected January 10 in 2 separate McPhail traps in grapefruit trees at Homestead, Dade County. (Fla. Coop. Sur.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - *Biological Control Zone*: In state of Tamaulipas, 42,037 citrus trees were inspected on 27 properties in municipios Hidalgo, Guemes, Padilla and Ciudad Victoria with 4,258 trees found infested on 25 properties. Reports indicate good, general, biological control. The pest is now under commercial control in 26 of 36 properties reporting from Campeche in November and December. A total of 105,000 parasites (*Prospaltella opulenta*) were released during December. *Chemical Control Zone*: In state of Nuevo Leon, 2 heavy infestations were found during December. The first, located about 6 air miles southwest of Linares, consists of 11 trees heavily infested and an unknown number of surrounding trees lightly infested. Infestation has not been delimited. This infestation was found to be parasitized with *Amitus hesperidum*. The other heavy infestation is in Municipio Montemorelos, near Municipio Allende. Focal point consists of 20-30 heavily infested trees with 1,000 or more lightly infested trees in same grove. This infestation has not been delimited. (PPC, Mex. Reg.).

CITRUS ROOT WEEVIL (*Pachnaeus litus*) - FLORIDA - This species and another weevil, *Artipus floridanus*, moderate on Key lime (*Citrus aurantifolia*) at Tavernier, Monroe County, on Florida Keys, December 15, 1961. Although infestation was moderate, all of 50 trees inspected were infested and nurseryman requested control recommendations. (Fla. Coop. Sur.).

YUMA SPIDER MITE (*Eotetranychus yumensis*) - ARIZONA - Light infestations present in some citrus groves in Yuma County. (Ariz. Coop. Sur.).

## TRUCK CROP INSECTS

CABBAGE APHID (Brevicoryne brassicae) - GEORGIA - Light on cabbage in Colquitt and Thomas Counties. (Johnson).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Infestations continue medium to heavy on sugar beets and other crops in central and southwest areas. (Ariz. Coop Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - FLORIDA - Light on one acre of sweetpotatoes at Citra, Marion County, January 10. (Fla. Coop. Sur.).

CORN EARWORM (Heliothis zea) - FLORIDA - Larvae light on okra at High Springs, Alachua County, January 5. (Fla. Coop. Sur.).

AN OLETHREUTID (Crocidosema plebeiana) - FLORIDA - Larvae light on 2 acres of okra at High Springs, Alachua County, on January 5, and on 16 acres of same crop at Citra, Marion County, on January 9. (Fla. Coop. Sur.).

A LEAF ROLLER (Platyonta sp.) - FLORIDA - Larvae light on okra at Citra, Marion County, January 9. (Fla. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Survey conducted on 2-acre patch of okra in Alachua County and 6 fields, comprising 67 acres, in Marion County. Total of 2,500 pods inspected with negative results. (Fla. Coop. Sur.).

## TOBACCO INSECTS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light on tobacco in the plant bed in Colquitt, Thomas, Cook, Berrien, Irwin and Coffee Counties. (Johnson).

## COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Lint cleaner inspections in Comanche, Cotton and Tillman Counties positive, but only light numbers were found. Inspections in Logan and Payne Counties were negative. (Okla. Coop. Sur.). FLORIDA - Determination of specimens from hibiscus blooms during last reporting period revealed one positive determination from Plantation Yacht Harbor. An attempt will be made to treat these plants in near future. No hibiscus blooms inspected in Florida Keys during this period. (Fla. Coop. Sur.). No specimens were recovered in ARKANSAS or LOUISIANA during 1961. (PPC, So. Reg., Dec. Rpt.).

## FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Control operations were conducted in spite of wet ground conditions; 24 spots were controlled during December; 112 spots remained controlled at end of 1961. Cold weather slowed spread to new spots by extension of period required to complete life cycle. Single brood trees with green crowns were infested and bark on upper trunks was pulled off by birds. (Texas For. Pest Com., Dec. Rpt.).

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - This species and Ips sp. severely damaging ponderosa pines in many locations over Calaveras County. Over 900 trees killed singly and in groups in an 800-acre stand. (C.Wolfe).

A TURPENTINE BEETLE - TEXAS - Control operations against an undetermined species were conducted on the Texas National Forest in Montgomery, Sabine and Walker Counties. (Texas For. Pest Com., Dec. Rpt.).

MIMOSA WEBWORM (*Homadaula albizziae*) - CALIFORNIA - Several additional infestations varying light to heavy on albizzia trees on several properties and a city park in Chico, Butte County. (Cal. Coop. Rpt.).

AN APHID (*Myzocallis pasaniae*) - CALIFORNIA - Adults medium on tanbark-oak in Pasadena, Los Angeles County. (Cal. Coop. Rpt.).

ORANGE TORTRIX (*Argyrotaenia citrana*) - CALIFORNIA - Medium larval infestations occurring on camellia leaves in Crescent City, Del Norte County. (Cal. Coop. Rpt.).

POTATO APHID (*Macrosiphum euphorbiae*) - CALIFORNIA - Adults heavy on leaves of *Cineraria* sp. in Vista, San Diego County. (Cal. Coop. Rpt.).

*Coccids in Florida* - *Diaspis boisduvalii* infested 10-20 percent of 200 young Chinese fanpalms (*Livistona chinensis*) at Winter Haven, Polk County (Jan. 2), and 300 orchid plants were quarantined for a 75-percent infestation at Orlando, Orange County (Jan. 8). *Odonaspis penicillata* was moderate on bamboo at Largo, Pinellas County (Jan. 2), and a few were found on same host at West Palm Beach, Palm Beach County (Dec. 29, 1961). FLORIDA RED SCALE (*Chrysomphalus aonidum*) was moderate on fragrant tailgrape (*Artabotrys uncinatus*) at Homestead, Dade County (Jan. 8), along with BLACK THREAD SCALE (*Ischnaspis longirostris*), and was severe on *Camellia* sp. at Dover Heights, Hillsborough County (Jan. 5). COTTONY-CUSHION SCALE (*Icerya purchasi*) was light on citrus in a nursery at Auburndale, Polk County (Jan. 4), and severe on few pittosporum at Davie, Broward County (Jan. 3). HEMISPHERICAL SCALE (*Saissetia hemisphaerica*) was moderate on *Selaginella* fern at Largo, Pinellas County (Jan. 2), and light on 15 coontie (*Zamia floridana*) at Eloise, Polk County (Jan. 10). BARNACLE SCALE (*Ceroplastes cirripediformis*) infested one percent of 1,000 falsearalia (*Dizygotheca kerchoveana*) at Ft. Pierce, Saint Lucie County (Jan. 5), and was light on seagrape (*Coccoloba uvifera*) at Davie, Broward County (Jan. 8). *Ceroplastes ceriferus* infested 20 percent of 25 podocarpus plants at Eloise, Polk County (Jan. 10), and one percent of 500 plants at De Land, Volusia County (Jan. 4). COCONUT SCALE (*Aspidiotus destructor*) was moderate on 100 *Aglaonema* sp. plants at Apopka, Orange County (Jan. 11). *Phenacaspis cockerelli* was light on magnolia nursery stock at Holly Hill, Volusia County (Jan. 8), and on one palm at Homosassa, Citrus County (Jan. 4). (Fla. Coop. Sur.).

*Coccids in California* - Infestation of *Phenacaspis cockerelli* occurred on frangipani (*Plumeria* sp.) in a nursery property in Rolling Hills, Los Angeles County; subject to eradication treatment. (Cal. Coop. Rpt., Jan. 12). *Aspidiotus britannicus* heavy on Californialaurel in Sonoma, Tuolumne County; a new host and new county records. (Cal. Coop. Rpt.).

MEALYBUGS - OKLAHOMA - Light numbers noted in greenhouse in Stillwater area, Payne County. (Okla. Coop. Sur.).

A MITE (*Epilohmannia* sp.) - CALIFORNIA - This mite and nymphs of a phylloxera medium on roots of peashrub (*Caragana* sp.) in Madera, Madera County. (Cal. Coop. Rpt.).

## INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Declining slightly in Oklahoma County from mid-December counts; averaged 15 per head on heifers and 4 per head on steers. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Scattered infestations of undetermined species reported from Choctaw, Haskell, Mayes, Stephens and Beaver Counties. Although cold weather has persisted for past 30 days, no damaging populations have been reported. (Okla. Coop. Sur.). UTAH - Controls applied to 3,121 beef cattle at Beaver, Beaver County. Several dairy herds in same county also treated. (Knowlton, Dewsnup). A university herd at Logan heavily infested with 2 species; cattle elsewhere in Cache County rubbing due to infestations. (Haws, Knowlton).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Reported on hogs in Stephens County. (Okla. Coop. Sur.)

## HOUSEHOLD AND STRUCTURAL INSECTS

ELM LEAF BEETLE (Galerucella xanthomelaena) - MARYLAND - Heavy adult numbers caused a nuisance in a home at Cumberland, Allegany County. (U. Md., Ent. Dept.).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - FLORIDA - Collected in cellulose containing materials at Gainesville, Alachua County, January 16. Det. by L. A. Hetrick. This is first report of species for 1962. Reproductives left nest under heated household conditions January 15. (Hetrick, Fla. Coop. Sur.).

AN EARWIG - GEORGIA - Numbers, probably Labidura riparia, very abundant in homes in Fort Valley, Peach County. (Snapp).

CLOVER MITE (Bryobia praetiosa) - MARYLAND - Heavy numbers occurred in a home at Silver Spring, Montgomery County. (U. Md., Ent. Dept.).

## STORED-PRODUCT INSECTS

INDIAN-MEAL MOTH (Plodia interpunctella) - NEW MEXICO - Relatively light larval infestations continue to be found in stored grain checked in southern counties. (N. M. Coop. Rpt.).

## BENEFICIAL INSECTS

LADY BEETLES - ARKANSAS - Large numbers of Coleomegilla maculata observed overwintering at bases of trees in upper Arkansas River Valley area. (Ark. Ins. Sur.).

## MISCELLANEOUS INSECTS

A DERMESTID (Dermestes peruvianus) - WISCONSIN - Specimens collected December 4, 1961, from bird cages at Genetics Research Laboratory at Madison, Dane County, constitute a new record for the State. Det. by P. Spangler. (Wis. Ins. Sur.).

A CUBAN MAY BEETLE (Phyllophaga bruneri) - FLORIDA - Collected in blacklight traps at check points in Miami, Dade County, as late as December 29, 1961. Adult population appears to be at low level, as indicated by fact only 11 specimens were collected during December. However, above date is latest during past 3 years. (Fla. Coop. Sur.).

A POWDER-POST BEETLE (Trogoxylon aequale) - CALIFORNIA - Infested imported bamboo basket. Infestation spread into hardwood floor in home at Fair Oaks, Sacramento County. (Cal. Coop. Rpt.).

A YELLOW JACKET (Vespula pensylvanica) - CALIFORNIA - Large, active colony in soil in West Los Angeles, Los Angeles County. Although temperature has ranged 32-75 degrees, colony is as active as would be expected in midsummer. (R. E Wagner).

STONEFLIES - ARKANSAS - Specimens collected in northwest recently and reported week ending January 6 have been determined as Allocapnia rickeri, A. granulata and a species which is probably new and is widespread throughout the Ozarks. Det. by H. H. Ross. (Ark. Ins. Sur.).

## CORRECTION

CEIR 12(2):20 - A WALKINGSTICK (Anisomorpha ferruginea) - ARKANSAS - Should read, found in small numbers during fall outbreak in Polk County. Principal species involved was Diapheromera femorata, as reported in CEIR 11(47):1058.

## LIGHT TRAP COLLECTIONS

| | Pseud. unip. | Argot. ips. | Feltia subterr. | Prod. ornith. | Perid. saucia | Laphyg. frug. | Trich. ni | Helio. zea |
|---|---|---|---|---|---|---|---|---|
| SOUTH CAROLINA | | | | | | | | |
| Charleston 1/8-14 | 1 | 3 | 1 | | | | | |
| TEXAS | | | | | | | | |
| Brownsville 12/1/61-1/5/62 | 79 | 65 | 113 | 27 | 196 | 150 | 22 | 15 |

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Additional Light Trap Collections - ARMYWORM (Pseudaletia unipuncta) - MAINE - Late season activity in 1961 was indicated by adults captured in blacklight traps operated for winter moth (Operophtera brumata). Data are tabulated below. (A. E. Brower).

| Locality | Date | Male | Female |
|---|---|---|---|
| Farmingdale | Nov. 20 | 1 | |
| Camden | Nov. 4 | 4 | |
| | 7 | 2 | 6 |
| | 8 | 1 | |
| | 14 | 2 | |
| Surry | Oct. 30 | | 1 |
| | Nov. 4 | 1 | |
| | 5 | | 1 |
| | 14 | 2 | |
| Bar Harbor | Nov. 7 | | 1 |
| Cherryfield | Nov. 15 | 1 | |
| Dennysville | Nov. 6 | | 2 |
| West Pembroke | Nov. 6 | | 2 |

# SUMMARY OF INSECT CONDITIONS IN SOME COUNTRIES OF THE NEAR EAST AND AFRICA

## 1961

The six summaries of insect conditions that follow have been submitted in the 1961 Annual Report of the Regional Insect Control Project, with headquarters in Beirut, Lebanon. The first attempt to present information on the more important insect pests of the Near East in the Cooperative Economic Insect Report was made in 1955 following a request from the survey committee of the Entomological Society of America. For the benefit of CEIR readers, it may be well to point out that the Regional Insect Control Project is a cooperative program operated by the Plant Pest Control Division, Agricultural Research Service, in accordance with an agreement signed on February 18, 1954, between the U. S. Department of Agriculture and the International Cooperation Administration. At the present time, a staff of nine entomologists are stationed in seven countries working with the personnel of the U. S. Operations Missions and Ministries of Agriculture.

The work of these entomologists is designed to fulfill commitments to the host countries, with respect to the evaluation of locust problems, the demonstration of control practices, development of insect surveys and the training of nationals in methods, procedures and the organization of applied entomology and plant quarantine work. During the last few years the Ministries of Agriculture have strengthened their Plant Protection organizations. Insect survey operations have been strengthened through the assignment of Joseph W. Gentry as survey specialist to the project headquarters in Beirut. Mr. Gentry has kindly reviewed and edited the 1961 summaries. An increased effort has been made to collect, identify and record pest species of economic importance. Firsthand information on foreign pests should serve to familiarize the entomologist and the pesticide industry of the United States with the major pests in the areas reported on. It should lead to better understanding and mutual interest in the entomological problems common to the United States and other nations. (Edson J. Hambleton, Assistant to the Director (Foreign Technical Programs), Plant Pest Control Division, ARS, USDA, Washington 25, D. C.).

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## Summary of Insect Conditions in Afghanistan

Prepared by E. R. Millet

This summary is based on an almost countrywide survey made in Afghanistan during the spring, summer and autumn of 1961. Of 302 collections submitted to the U. S. Department of Agriculture for determination, 232 returns had been received to December 1. Almost all of the species mentioned in this summary are based on these returns. The writer is indebted to, and wishes to thank, the taxonomists in the U. S. National Museum, whose cooperation made these determinations possible. A list of the determinations is available from the Beirut RICP office.

Cereal and Forage Insects: A WEEVIL LARVA (*Hypera* sp., close to *H. postica* and *H. brunneipennis*) caused moderate damage to alfalfa at Mazar-i-Sharif and Kabul. SENN PEST (*Eurygaster integriceps*) and a PENTATOMID (*Aelia melanota*) were light in the Qaisar and Maimana areas (less than 5 per square meter) and damage did not merit control. Specimens of *Eurygaster* sent to Germany by Afghan Plant Protection officials were identified as *E. integriceps* with a complex of 3 subspecies: *straminea*, *testacea* and *plagiata*. Other insects collected from wheat included: a MIRID (Lygus gemellatus), PENTATOMIDS (Dolycoris penicillatus, Holcogaster sp., Stiraspis nigricornis, D. baccarum, Eurydema maracandium, E.ornata, E. pulchrum, Carpocoris purpureipennis) and a PHRRHOCHORID (Pyrrhocoris apterus). It should be noted that wheat fields contained many wild plants, especially crucifers. A THRIPS (Haplothrips tritici) was numerous in the heads of wheat in the Helmand Valley and Kabul area during the summer. WEEVIL damage to alfalfa was light throughout Afghanistan this year. STALK BORERS (near or Chilo zonellus) were very heavy in corn at Jalalabad. Two BORERS, one probably Argyria sticticraspis in the stem, and the other, probably Emmalocera depressella in the roots, infested 25 percent of sugarcane at Jalalabad. A medium infestation of APHIDS (Macrosiphum granarium, Sipha agropyrella and Cavahyalopterus noxius) were found in wheat fields at Paghman. ARMYWORM (Pseudaletia unipuncta) was numerous but not damaging in ripened wheat near Kabul; also observed on young corn. BEET ARMYWORM (Spodoptera exigua) caused damage to alfalfa at Lashkar Gah. SPOTTED ALFALFA APHID (Therioaphis maculata) was prevalent on alfalfa at several locations. Other APHIDS (Therioaphis riehmi and Aphis craccivora) were collected from sweetclover and alfalfa in the Helmand Valley. MIRIDS collected from alfalfa were: Deraeocoris punctulatus at Kabul and Jalalabad, Adelphocoris lineolatus at Kabul, Stenodema laevigatum at Bamian, and Lygus gemellatus at Kabul. These were taken in sweepings. A mixture of LEAFHOPPERS (Macrosteles sp. and Erythroneura sp.) were heavy and doing medium damage to young corn in the Logar Valley.

Locusts: As far as known there was no DESERT LOCUST (Schistocerca gregaria) in Afghanistan during 1961. An ITALIAN LOCUST (Calliptamus sp.) and MOROCCAN LOCUST (Dociostaurus moroccanus) were not heavy in the northern provinces and the control campaign by the Soviets lasted only two weeks. A LOCAL GRASSHOPPER (Oedaleus sp., senegalensis or near) was noted in wheat at Farah in May and was found completely stripping leaves from wheat near Kandahar. Calliptamus barbarus and Dociostaurus sp. were noted in the desert area near Jalalabad in June and control against these species in crops was applied at Mimlah. Acrida sp., apparently a subspecies of pellucida or near, appeared to cause heavy damage to small pepper plants in the Helmand Valley. Sphingonotus carinatus was collected in a desert area near Mokur. Chrotogonus trachypterus was numerous and caused considerable damage to vegetables in Lashkar Gah. EGYPTIAN TREE GRASSHOPPER (Anacridium aegyptium) was observed at Lashkar Gah and Jalalabad. Pyrgomorpha sp., probably conica, nymphs were found attacking potatoes in the Logar Valley.

Fruit Insects: A PIERID (Aporia crataegi) was light on apricots in Mazar-i-Sharif Province in April and apples at Sar-i-Pal. APHIDS are probably the most widespread and common pest found on fruit trees in Afghanistan. A large, dark purple APHID (Pterochlorus persicae) was extremely heavy and damaging on peach limbs at Coriz-i-Mir, sometimes covering the entire limb for several inches. MEALY PLUM APHID (Hyalopterus pruni) was heavy on apricots and almonds in Mazar-i-Sharif and Shebarghan Provinces and other areas. Other aphids identified from fruit included Anuraphis helichrysi from almond, and Aphis pomi and Anuraphis mali from apple. A. mali caused curling of pear leaves. PEAR PSYLLA (Psylla pyricola) and an APHID (Anuraphis sp.) were found on pears at Sari-i-Pul. Psylla sp. was damaging to pears in Kabul during the summer. ERMINE MOTH (Hyponomeuta padella) was heavy on apples, apricots and almonds around Maimana. This pest is also widespread in the Kandahar, Gazni, Paghman, and Kabul areas and causes considerable damage to fruits every year. CODLING MOTH (Carpocapsa pomonella) occurs wherever apples are grown in Afghanistan, and with practically no control programs, causes an estimated 35-50 percent damage annually. A GALL-FORMING HYMENOPTERON, yet undetermined, was found causing exceedingly heavy damage to peach through abnormal growth and rosetting of buds, at Coriz-i-Mir. A BUPRESTID (Capnodis carbonarius) was collected on almond between Gazni and Kalat. WHITE GRUBS caused considerable damage to young apple and pear seedlings near Kabul in September. A light infestation of a FRUIT-TREE MITE (Bryobia rubrioculus) was observed on apple leaves in Kabul in June. A VESPID (Vespula germanica) and ORIENTAL HORNET (Vespa orientalis) were numerous in Afghanistan and caused damage to grapes and cherries at Kabul and Lashkar Gah. The writer was stung on the leg by V. orientalis and the sting was painful for several days and left a sore for two weeks. A COCCID (Lecanium turanicum tentative) was moderate on apple branches at Sar-i-Pul and very heavy on plum at Maimana. Another COCCID (L. unifasciatum tentative) was heavy on peach limbs in Kabul. PARLATORIA DATE SCALE (Parlatoria blanchardi) was light on date palm in Laghman.

Vegetable and Truck Crop Insects: Cabbage, lettuce and onions were apparently free of insects in the Jalalabad area in March. Gardens were heavily infested with APHIDS in the Helmand Valley, especially Aphis fabae, on beets and Brevicoryne brassicae on cabbage and mustard. CUTWORMS (Agrotis sp.) and WIREWORMS were reported on sugar beets in Kataghan Province. An ARCTIID was found doing heavy damage to cucurbits at Mazar-i-Sharif. RED PUMPKIN BEETLE (Raphidopalpa foveicollis) caused heavy damage to melons near Herat in May and was observed in the Helmand Valley in July. MELON FLY (Dacus cucurbitae) caused almost 100 percent damage to melons and cucumbers at Sarobi and Jalalabad in July. The BALUCHISTAN MELON FLY (Myiopardalis pardalina) was extremely damaging to all melons in the Helmand Valley, attacking as high as 65 percent of the fruit in some fields and with as many as 50 to 100 maggots per melon. A small, black melon WEEVIL (Baris sp., prob. granulipennis) was also found attacking 5 to 10 percent of melons, particularly watermelons, with as many as 50 or more larvae in one fruit. The TWELVE-SPOTTED MELON BEETLE (Epilachna chrysomelina) caused only nominal damage to melons and cucurbits in the Helmand Valley and at Maimana. A SPIDER MITE (Tetranychus sp.) caused some damage to melons, but only about 5 per leaf were found. A PENTATOMID (Eurydema ornata) was heavy on crucifers in the Kabul and Logar Valley areas. GREEN PEACH APHID (Myzus persicae) and Aphis sp. were medium on tobacco at Jalalabad; MELON APHID (Aphis gossypii) was also medium on okra at Jalalabad. A THRIPS (Haplothrips tritici) was collected on oats and crucifers at Bamian. A SPIDER MITE (Tetranychus sp., probably kanzawai) was taken from melons at Laghman. Heavy populations of LEAFHOPPERS (Empoasca decipiens and E. decedens) were indicated by sweeps in sugar beets at Kandahar. LEAFHOPPERS (Macrosteles sp. and Empoasca sp.) were prevalent in potatoes in the Logar Valley. A CABBAGEWORM (Pieris brassicae) was collected on wild crucifers at the Shebar Pass and adults were often numerous elsewhere. A TOMATO FRUITWORM (Heliothis sp.) attacked tomatoes near Jalalabad. A PENTATOMID (Eurydema ornata) was numerous and a LYGUS BUG (Lygus gemellatus) was also collected on radishes in the Logar Valley. A COREID (Liorhyssus hyalinus) was found in the seed heads of tobacco at Jalalabad. A CRICKET (Gryllus desertus) was numerous in a garden south of Maimana. Two species of MOLE CRICKETS (Gryllotalpa gryllotalpa and G. africana) were collected under lights and in a garden in Kabul. One of the most interesting collections in Afghanistan this year was of an ORTHOPTERON (Schizodactylus monstrosus) of the family Schizodactylidae. This peculiar family is not clearly either in the grylloid or gryllaeridoid group. The insect makes burrows and is sometimes harmful either to plant roots or irrigation canals or dams.

Citrus Insects: CITRUS WHITEFLY (Dialeurodes citri) and YELLOW SCALE (Aonidiella citrina) were found heavy in some citrus groves at Jalalabad and Laghman in March. CITRUS PSYLLA (Diaphorina citri) was extremely heavy at Laghman and Jalalabad in March, June and September; as many as 200 adults per leaf. CUTWORMS damaged newly planted citrus seedlings at Abdul Khail. A LEPIDOPTEROUS LEAF MINER (probably Phyllocnistis citrella) was found in orange seedlings at Jalalabad in July and were again numerous in mid-September. A SPIDER MITE (Eutetranychus orientalis) was collected from citrus at Jalalabad in July.

Cotton Insects: CUTWORMS (Agrotis sp.) and MITES were reported the main problems in cotton in Mazar-i-Sharif Province. SPINY BOLLWORM (Earias insulana) was very light on cotton in the Helmand Valley, but infestations reached 100 percent in patches around Jalalabad. SPIDER MITES (Tetranychus sp.) were observed on cotton in the Helmand Valley, but only about 1 or 2 per leaf. A WHITEFLY (probably Bemisia sp.) was very heavy in this area in September, with as many as several hundred per leaf. PINK BOLLWORM (Pectinophora gossypiella) occurred in the Jalalabad area this year, but the infestation was not heavy. LEAFHOPPERS (Empoasca decipiens and E. decedens) were heavy in cotton at Kandahar.

Forest and Shade Tree Insects: APHIDS (Eulachnus sp.) were numerous on pines in the Helmand Valley in March and in Kabul in June. A CHRYSOMELID (Plagiodera versicolora) was heavy, both larvae and adults, on willow leaves at Sar-i-Pul and Maimana. A COCCID (Adiscodiaspis tamaricicola) was exceedingly heavy, almost covering the trunks of tamarisk trees, at a government nursery at Darweshan. APHIDS (Chromaphis juglandicola and Callipterus juglandis) were collected on walnut at Paghman. A LACE BUG (Monosteira discoidalis) caused considerable damage to willow and poplar leaves in the Kabul area. TERMITES (Microcerotermes sp., probably gabrielis) caused heavy damage to roots of young redbud in the government nursery at Kabul. APHIDS (Therioaphis sp.) were exceedingly heavy on all elm trees in Kabul, producing large amounts of honeydew. BORERS (Aeolesthes sarta and Capnodis cariosa) have killed about 25 percent of the elm trees along streets in Kabul; willows and poplars were also heavily attacked in windbreaks and commercial stands. COCCIDS - Eriococcus salicis (tentative) was moderate on willow limbs in Kabul and Leucaspis sp. was heavy and serious on white pine at Paghman. An APHID (Aphis craccivora) was quite heavy on locust trees throughout Kabul. A GIANT MEALYBUG (Drosicha media tentative) and a small BUPRESTID (Melanophila picta) were collected from willow. Some other insects identified from poplar included an APHID (possibly Chaitophorus populi) in Kabul, a HORNWORM (near or Cerura vinula intermedia) at Paghman, and a COCCID (Aspidiotus armeniacus) on trunk of silver poplar at Paghman.

Ornamental Insects: THRIPS (Taeniothrips sp., probably undescribed) were numerous in roses at Mazar-i-Sharif, and nymphs of a LEAFHOPPER (probably Edwardsiana rosae) were heavy on roses at Sar-i-Pul. A WHITEFLY (Bulgarialeurodes cotesii) was heavy and damaging on roses in Kabul. APHIDS collected on ornamentals included Aphis gossypii, medium on mint and heavy on zinnia, and Anuraphis sp. heavy on cosmos at Lashkar Gah; Macrosiphoniella sanborni, heavy on chrysanthemums at Kandahar; and Macrosiphum rosae, on roses in Kabul. SOFT BROWN SCALE (Coccus hesperidum) was collected from ivy plants in a greenhouse in Nadi-Ali in March. A SPRINGTAIL (Onychiurus fimetarius) was collected from the soil surface of potted geranium plants in Kabul and another SPRINGTAIL (Deuterosminthurus repandus) was found numerous on a lawn of clover and Bermuda grass at Paghman. CICADELLIDS (Erythroneura sp. and Empoasca sp.) damaged castorbeans at Kandahar. A CYNIPID (Diplolepis sp.) was found forming galls on roses at Shebar Pass. A NOCTUID (Heliothis sp.) destroyed buds of carnations at Paghman. Light infestations of HEMISPHERICAL SCALE (Saissetia hemisphaerica) were observed on potted boxwood plants at Paghman. A TINGID (Cystochila delineatus) was moderate on ornamental Papillionaceae at Jalalabad. BEAN BUTTERFLY (Lampides boeticus) severely attacked seedpods of Scotchbroom at Kabul.

Stored Grain Pests: Several stored-grain warehouses in Kabul and the surrounding communities were inspected during the summer. Specimens of the following were collected and identified: KHAPRA BEETLE (Trogoderma granarium), another DERMESTID (Attagenus piceus), a PYRALID (Aglossa pinguinalis), TENEBRIONIDS (near Pedinus sp., Alphitobius laevigatus and Tribolium castaneum) and an unusual COCKROACH (probably Polyphaga sp.), which is usually not a pest, but was numerous at the time of examination.

Beneficial Insects: The following COCCINELLIDS were collected from sweepings in alfalfa at Kabul: *Adonia variegata*, *Coccinella septempunctata*, *C. undecimpunctata*, *Synharmonia conglobata buphthalmus*. An ICHNEUMONID (*Ophion* sp.) was found numerous under light at night on walls and screens at Kandahar. A BRACONID (*Parahormius jason*) was numerous in citrus groves at Jalalabad in March, as was also an ENCYRTID (*Zeteticontus* sp.). A COCCINELLID (*Halyzia tschitscherini*) was collected from walnut infested with aphids. DAMSEL BUGS (*Nabis ferus* and *N. capsiformis*) were collected from alfalfa sweeping at Kabul and in the Logar Valley. A LACEWING (*Chrysopa carnea*) was numerous in Persian clover. A BRACONID (*Apanteles glomeratus*) was found, apparently associated with *Aporia crataegi*, on apple at Sar-i-Pul.

Miscellaneous Insects: An APHID (*Acyrthosiphon* sp., probably *mordvilkoa*) was very heavy on flax, 100 per sweep, in Logar Valley. MEALY PLUM APHID (*Hyalopterus pruni*) was heavy on reeds in same area. APHIDS were collected and identified on many wild and miscellaneous plants as follows: *Anuraphis* sp. probably *tulipae*, on wild iris; *Anuraphis cardui* on thistle; *Aphis gossypii* and *Myzus persicae* on hollyhock; *Aphis fabae* on nightshade; and *Aphis rumicis* on dock. LEAF-CURLING ANTS (*Polyrhachis* sp.) were observed on pear leaves at Jalalabad. Two PENTATOMIDS (*Schizops aegyptiaca* and *Odontotarsus freyi*) were collected in grass at Lashkar Gah. An EARWIG (*Labidura riparia*) was common at both Lashkar Gah and Kabul. BAGWORMS (near or *Amicta* sp.) were found heavy on camelthorn in the desert area near Jalalabad. A NYMPHALID (near or *Vanessa cardui*) was light on thistle and hollyhock near Paghman. A MITE (*Tetranychus* sp.) was medium on hollyhock at Kabul.

Man, Animal, Household Insects: Five species of HORSE FLIES were collected at Paghman: *Atylotus* sp., near *agrestis*; *Tabanus cordiger*; *T. leleani*; *T. bromius*; *Tabanus* sp., near *miki*. PSYCHODIDS (*Psychoda alternata*) were collected on the toilet walls of the hotel in Mazar-i-Sharif. A SIMULIID (*Simulium* (*Wilhelmia*) sp., perhaps *aretjanae*) was also collected at Kabul. A LOUSE FLY (*Hippobosca longipennis*) was observed as very heavy and annoying to dogs at Lashkar Gah and Kabul. An unusual and large PILLBUG, unidentified, was observed very numerous in the Logar Valley. A TERMITE (*Microcerotermes* sp.) was very heavy in roof timbers of mud houses in the Helmand Valley. The same species damaged cardboard boxes of medical supplies in a hospital storeroom at Lashkar Gah. MOSQUITOES (*Aedes caspius* and *Culex pipiens quinquefasciatus*) were quite annoying in Jalalabad. COCKROACHES (*Shelfordella* sp.) were numerous in houses in Kabul, but the species apparently does not breed inside houses. BEDBUG (*Cimex lectularis*), which is quite common in homes of the poorer classes in towns and villages, brought complaints from several American homes in Kabul this year. HOUSE FLY (*Musca domestica*) did not appear numerous in Kabul, but was heavy and annoying in bazaars and villages.

## Summary of Insect Conditions in Iran

Prepared by G. T. Brooks
and G. Farahbakhsh

Cereal and Forage Insects: DESERT LOCUST (*Schistocerca gregaria*) infestations occurred in the spring in three provinces of southern Iran; Khuzestan, Fars and Kerman. In the fall of the year, light swarms were reported in Baluchistan and Fars. Damage was generally light. MOROCCAN LOCUST (*Dociostaurus moroccanus*) infestations were limited to light outbreaks in Gorgan and heavy infestations in the Moghan Plains. NATIVE GRASSHOPPERS (*Calliptamus* spp. and *Dociostaurus* spp.) were generally distributed throughout the country. SENN PEST (*Eurygaster integriceps*) was heavy in the Tehran, Isfahan and Lorestan areas, and some other pentatomids of the genus *Aelia* were heavy in Azerbaijan Province. Controls were applied to over 50,000 hectares against senn pest alone. DURRA STALK BORER (*Sesamia cretica*) caused heavy damage to sugarcane in Khuzestan and attacked corn and sorghum in the Caspian Sea area. ALFALFA WEEVIL (*Hypera postica*) was serious on alfalfa at Karaj. Heavy infestations of CORN LEAF APHID (*Rhopalosiphum maidis*) were limited to corn in the area around the Caspian Sea and a MARGARODID (*Porphyrophora tritici*) caused severe damage to wheat in Hamadan and Arbodil.

*Deciduous Fruit and Olive Insects*: BLACK SCALE (*Saissetia oleae*) reached heavy proportions in the olive-growing area of Rudbar, and OLIVE SCALE (*Parlatoria oleae*) was heavy and *Chionaspis asiatica* medium to heavy in the Karaj and Tehran deciduous fruit-growing areas. Infestations of OYSTERSHELL SCALE (*Lepidosaphes ulmi*) were heavy and outbreaks of PEAR LACE BUG (*Stephanitis pyri*) occurred on apples in the Tehran area. OLIVE PSYLLID (*Euphyllura olivina*) caused only light damage to olives at Rudbar. ERMINE MOTH (*Hyponomeuta padella*) was severe on cherry, apple and almond trees about Hamadan, and WOOLLY APPLE APHID (*Eriosoma lanigerum*) was medium to heavy in the Caspian Sea and Tehran areas. Sporadic infestations of GREEN PEACH APHID (*Myzus persicae*) occurred throughout the deciduous fruit-growing area, reaching heavy proportions at some places. MEALY PLUM APHID (*Hyalopterus pruni*) severely infested young almond trees in Semnan, and *Pterochlorus persicae* caused heavy damage to apricot and peach in Hamadan and Semnan. *Anuraphis* sp. also caused severe leaf curl on peach trees in Damavand, Semnan and Hamadan. Infestations of LEOPARD MOTH (*Zeuzera pyrina*) were heavy on apples around Tehran, but infestations of a FRUIT-TREE MITE (*Bryobia rubrioculus*) were light at Damavand on apples and at Hamadan on cherry.

*Citrus Insects*: Heavy infestations of CITRUS RUST MITE (*Phyllocoptruta oleivora*) were present throughout the Caspian Sea citrus-growing area except at Gorgan. In the citrus area of the South (Khuzistan, Fars and Kerman Provinces), medium infestations of *Eutetranychus orientalis* developed. Heavy outbreaks of the following coccids occurred in the Caspian Sea citrus-growing area: CALIFORNIA RED SCALE (*Aonidiella aurantii*) at Ramsar; YELLOW SCALE (*A. citrina*) at Babolsar, Babol, Amul and Lahijan; BROWN SOFT SCALE (*Coccus hesperidum*) at Khoramabad, Pahlavi and Ramsar; and COTTONY-CUSHION SCALE (*Icerya purchasi*) in scattered areas. PURPLE SCALE (*Lepidosaphes beckii*), CHAFF SCALE (*Parlatoria pergandii*) and BLACK PARLATORIA SCALE (*P. zizyphus*) were of major economic importance throughout the area. Heavy infestations of GRAPE MEALYBUG (*Pseudococcus maritimus*) were limited to Pahlavi, Ramsar and Lahijan.

*Truck Crop Insects*: CABBAGE APHID (*Brevicoryne brassicae*) severely attacked cabbage throughout Iran, and infestations of an ONION MAGGOT (*Hylemya* sp.) reached heavy proportions on garlic at Hamadan and Ahwaz. Infestations of BEET ARMYWORM (*Spodoptera exigua*) continued light in 1961, but infestations of a SUGAR-BEET CROWN BORER (*Gnorimoschema ocellatella*) were severe throughout Iran.

*Forest, Shade Tree and Ornamental Insects:* Heavy infestations of ELM LEAF BEETLE (*Galerucella xanthomelaena*) occurred on elm throughout the country, and a CHRYSOMELID (*Melasoma populi*) caused serious damage to poplar at Tehran and Karaj. A BUPRESTID (*Melanophila* sp.) was found infesting *Populus nigra* at Borjerd. Infestations of BLACK SCALE (*Saissetia oleae*) were heavy on oleander at Babolsar, and EUROPEAN ELM SCALE (*Gossyparia spuria*) caused heavy damage to elm at Karaj and Tehran. Infestations of a WHITEFLY (*Siphoninus granati*) were heavy, as in 1960, on ash in Tehran. PEAR LACE BUG (*Stephanitis pyri*) and ALMOND BUG (*Monosteira unicostata*) were respectively found infesting *Chaenomeles japonica* at Chalus and *Populus canescens* at Nowshahr. APHIDS (*Pemphigus* spp.) attacked poplar, and heavy infestations of CHRYSANTHEMUM APHID (*Macrosiphoniella sanborni*) were found on chrysanthemums throughout Iran. An APHID (*Eriosoma *lanuginosum*) was severe on elm throughout the country, as well as ROSE APHID (*Macrosiphum rosae*) on rose. The APHID (*Myzus certus*) caused severe leaf curl to pansy plantings, as in 1960, at Tehran, and another APHID (*Lachnus salignus*) was reported causing limited damage to willow at Rezaiyeh.

*Beneficial Insects*: Approximately 65 million SENN PEST PARASITES (*Microphanurus semistriatus*) were reared and released in senn pest-infested fields at Isfahan. For control of the cottony-cushion scale in the Caspian Sea area, VEDALIA (*Rodolia cardinalis*) was reared and distributed. In the Rudbar and Ramsar area, it has not been determined whether the ENCYRTID PARASITE (*Aphycus helvolus*), released for the control of black scale, has become established. A fungus (*Cephalosporium lecanii*) continued to effectively control *Pulvinaria floccifera* in the Caspian Sea area.

## Summary of Insect Conditions in Turkey

Prepared by F. M. Philips

*Cereal and Forage Insects*: DESERT LOCUST (*Schistocerca gregaria*), ITALIAN LOCUST (*Calliptamus italicus*) and MOROCCAN LOCUST (*Dociostaurus moroccanus*) were reportedly light to nonexistent in 1961 in southeastern Turkey. SENN PEST (*Eurygaster integriceps*) was reported as generally light to moderate in wheat in the eastern Anatolian Plains, but infestations did not generally warrant control during the year. Other PENTATOMIDS (*Aelia* spp.) were heavy enough to require control on about 38,000 hectares of small grains. An ARMYWORM (*Prodenia* sp.), EUROPEAN CORN BORER (*Ostrinia nubilalis*) and a CORN EARWORM (*Heliothis armigera*) were heavy in the Adana Plains area. A CUTWORM (*Agrotis* sp.) caused moderate damage to grain crops in the Black Sea area.

*Fruit Insects*: CODLING MOTH (*Carpocapsa pomonella*) caused heavy damage in the Konya area and light to moderate damage in the Bursa-Gemlik area. MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) infestations in citrus crops were reportedly about 15 percent on the Mediterranean coast. A SPIDER MITE (*Tetranychus* sp.) caused light to moderate damage in the Konya, Bursa and Istanbul areas. Two COCCIDS caused some damage to citrus in the Adana Plains area. A HYPONOMEUTID (*Hyponomeuta* sp.) reportedly caused light damage in most fruit-growing areas of Turkey. OLIVE FRUIT FLY (*Dacus oleae*) and an OLIVE FRUIT MOTH (*Prays* sp.) were heavy on olives in the Bursa area. Light populations of PEAR LACE BUG (*Stephanitis pyri*)* were noted on apple at Edine in May.

*Cotton Insects*: SPINY BOLLWORM (*Earias insulana*) was reported as light on cotton in the Adana Plains area. PINK BOLLWORM (*Pectinophora gossypiella*) reportely caused 4 to 5 percent damage to cotton along the Mediterranean coast. A BOLLWORM (*Heliothis armigera*) caused some localized heavy damage to the cotton crop in the Adana Plains area.

*Miscellaneous Insects*: A COCCID (*Pulvinaria* sp.) caused moderate damage on tea in the Black Sea area. THRIPS were moderate to heavy on tobacco along the Black Sea coast. Two COCCIDS (*Aonidia lauri* and *Coccus hesperidum*)* were very heavy and damaging to ornamental *Laurus* trees in Istanbul. APHIDS were heavy on most truck crops in Adana, Izmir and Istanbul areas.

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* Identified by specialists in the U. S. National Museum

## Summary of Insect Conditions in Ethiopia

Prepared by W. C. Kurtz /

Cereal and Forage Insects: The DESERT LOCUST (*Schistocerca gregaria*) infestation in June was considered by the British Desert Locust Survey as the heaviest since 1954. This was centered in the Railway area between Awash and Dire Dawa, with escapes moving eastward toward the Somali Republic. The summer season in northern Ethiopia was light for desert locust and Ministry ground control was reported as effective. NUTGRASS ARMYWORM (*Spodoptera exempta*)* was again heavy in 1961 in the central and western areas of the country, causing widespread damage to small grains, principally teff (*Eragrostis abyssinica*). MAIZE STALK BORER (*Busseola fusca*?)* is widely distributed and was of major importance on sorghum and corn, being found in older stalks of sorghum near the head; also in stalks and ears of corn. Stalk and ear infestations of 10 to 50 percent were common. In young sorghum, a borer, possibly the same species, was found throughout the stalk. CORN LEAF APHID (*Rhopalosiphum maidis*) was common but not damaging. At Jimma, heavy infestations of PLANTHOPPERS were found in experimental soybeans. MIRIDS (*Proboscidocoris punctaticollis*?, *Polymerus* sp.? and *Deraeocoris tibealis*)* were also found in these soybeans. A PENTATOMID (*Agonoscelis versicolor*)* was reported heavy on sorghum in western Eritrea.

Fruit and Nut Insects: BROWN SOFT SCALE (*Coccus hesperidum*) and COTTONY-CUSHION SCALE (*Icerya purchasi*) are generally distributed throughout Ethiopia on citrus. Many orchards have been made unproductive by severe infestations of coccids, particularly the aforementioned species. Efforts are being made to introduce VEDALIA (*Rodolia cardinalis*) as a control measure against *I. purchasi*. FLORIDA RED SCALE (*Chrysomphalus aonidum*) and CALIFORNIA RED SCALE (*Aonidiella aurantii*) were common on citrus at Debre Zeit and Nazareth. PURPLE SCALE (*Lepidosaphes beckii*) was damaging to citrus at Jimma. BLACK PARLATORIA SCALE (*Parlatoria zizyphus*)* was the outstanding pest and required controls in some citrus orchards in Eritrea. A light infestation of this scale was also found at Wuchale, near Dessie, on citrus. Light infestations of MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) and a FALSE CODLING MOTH (*Cryptophlebia leucotreta*)* were found in citrus fruits at Wuchale and in Eritrea. At Ghindi, near Asmara, there was a heavy infestation of MITES on citrus, the first such infestation, according to the local entomologist, ever recorded in that area. A PSYLLID (*Spanioza erythreae*)* caused considerable damage to new leaves of citrus in Debre Zeit and other areas. An ORANGE-DOG (*Papilio demolēus demodocus*), and probably other species, destroyed foliage on young orange trees in many areas. Damage to citrus terminals by an unspecified LEAF MINER was noted in Eritrea. *Annona* fruits were heavily infested with STRIPED MEALYBUG (*Ferrisia virgata*)* at Dire Dawa. Adults of a CALLIPHORID FLY (*Chrysomya putoria*)* were reported as causing heavy damage to ripe grapes at Nazareth. Although it is doubtful that the flies were causing primary damage, populations were extremely heavy and were a nuisance in the vineyard as well as in citrus orchards where they were attracted to honeydew of coccids. Light infestations of APHIDS were noted on citrus in Eritrea.

Vegetable Insects: At Debre Zeit, a heavy infestation of a SAWFLY (*Athalia* sp.)* and a CUTWORM (*Agrotis* sp.)* occurred on cabbage. A NOCTUID (*Prodenia litura*) was also found on cabbage. A LEAF MINER infested 20 percent of the leaves of sweetpotatoes in experimental plantings. CABBAGE APHID (*Brevicoryne brassicae*) was observed at Jimma, but well controlled by a braconid parasite (*Diaeretiella rapae*)*. Root crops at Jimma had heavy nematode populations. TWELVE-SPOTTED MELON BEETLE (*Epilachna chrysomelina*) and a CERAMBYCID STEM BORER were causing injury at Dire Dawa to cucurbits. Fava beans suffered some pod damage from

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/ Includes observations by J. W. Gentry.

* Identified by specialists in the U. S. National Museum.

NOCTUID larvae, and BEAN BUTTERFLY (Lampides boeticus) was observed at several locations. DIAMONDBACK MOTH (Plutella maculipennis) was heavy on crucifers at Debre Zeit and north of Senafe. Near Senafe, 20 to 40 percent losses were sustained to crucifer transplants by Agrotis sp. on two modern farms. Severe loss was also found on potatoes in storage from POTATO TUBERWORM (Gnorimoschema operculella). Light infestations of PEA APHID (Macrosiphum pisi) on lentils were noted in several areas. At Robi, eggplant had a heavy infestation of a COCCINELLID (apparently Epilachna hirta). A red ANT caused considerable damage to roots of many vegetables. A moderate infestation of a NOCTUID (presumably Heliothis armigera) was found on peppers near Ambo.

Stored-product Insects: Poor storage facilities, lack of chemical control, presence of most of the important grain pests and favorable climatic conditions give rise to devastating infestations of stored-grain insects in Ethiopia. Estimates of 50 to 60 percent loss of stored products were obtained. In the Jimma area, it was reported that 2 months after harvest about 85 percent of small grains were infested and corn disappeared from the market by this time because of insect damage. Examination of several lots of new-crop grain and legumes on the Addis Ababa market in October showed the percent infestation to be as follows: Wheat - 0, sorghum - 8, corn - 15, chickpeas - 10. Wheat, corn, lentils and chickpeas in storage for several months at one Jimma location showed infestation of 15 to 100 percent. RICE WEEVIL (Sitophilus oryzae) was the dominant species in the grains, and a BEAN BRUCHID (Callosobruchus chinensis)* was the major pest of the legumes.

Cotton Insects: A COTTON STAINER (Dysdercus sp.) and a LYGAEID (Oxycarenus sp.?) were found near Waldia, where 75 percent of the open cotton bolls were infested in some fields. In the Gibee River Valley, cotton was heavily infested with a LEAFHOPPER. Previous reports from this area indicated the presence of a WHITEFLY, SPINY BOLLWORM (Earias insulana), STAINERS and a LEAF FEEDER (possibly Heliothis sp.) on cotton. Light infestations of COTTON APHID (Aphis gossypii) were also found near Waldia. Evidence of BOLLWORM damage near Waldia and at Gibee was noted, but specimens of the insect were not recovered. Heavy infestations of THRIPS were reported from various areas.

Coffee Insects: At Jimma, a STINK BUG (Antestia lineaticollis)* was found on coffee. Other coffee insects found were a LEAF MINER, COCCIDS and MEDITERRANEAN FRUIT FLY (Ceratitis capitata). The latter feeds on the placenta of the berries, but does not apparently reduce the marketable value of the crop. A heavy infestation of a GREEN SCALE (Coccus sp.) at Harrar caused yield reduction and dieback. In the Jimma coffee area, insects reportedly do only 6 to 7 percent damage annually.

Oil-seed Insects: Ethiopian nigerseed (Guizotia abyssinica), a composite grown for the oil from the seed, was heavily infested with THRIPS in some areas. Flax was also heavily infested with THRIPS in many fields. Mustard, grown for oil, had light populations of a PENTATOMID (Eurydema sp.), APHIDS and SAWFLIES. NUTGRASS ARMYWORM (Spodoptera exempta) was found on Ethiopian nigerseed near Ambo, but little damage was noted.

Shade Tree and Ornamental Insects: COCCIDS, particularly COTTONY-CUSHION SCALE (Icerya purchasi) and BROWN SOFT SCALE (Coccus hesperidum), were prevalent on ornamentals. OYSTERSHELL SCALE (Lepidosaphes ulmi) and a PSYLLID (Diaphorina sp.)* were serious on ironweed (Vernonia amygdalina) in Addis Ababa. Palms were heavily infested with COCCIDS at Harrar. Hibiscus at Jimma was infested with a LYGAEID (Oxycarenus sp., near lavaterae)*. MEALYBUGS and COCCIDS were common on ornamentals and street trees in Asmara.

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* Identified by specialists in the U. S. National Museum.

## Summary of Insect Conditions in the Republic of the Sudan

Prepared by Arthur Kaatz in cooperation
with the Plant Protection Division, Sudan
Ministry of Agriculture

Cereal and Forage Insects: There are two DESERT LOCUST (Schistocerca gregaria) seasons in the Sudan. The winter season (November through March) in the Red Sea Hills coastal area and the summer season (June through October) in a wide belt across the north central part of the country. Infestations during the winter season were light in the southern part of the country, with numerous swarms spread out in the Port Sudan-Suakin region and scattered swarms from there on north to the northern borders of Sudan. Breeding was fairly heavy along the coast north of Port Sudan, but all hatches were controlled in the "hopper" stage. In the summer season, infestations were relatively light beginning in June in the Northern, Khartoum, Kordofan and Darfur Provinces. More swarms appeared from the northeast in July, with some egg laying in the Northern Province. Only a few swarms appeared during August, but 14 "hopper" hatches were recorded and successfully controlled. Numerous swarm movements were recorded in September, with some scattered egg laying and "hopper" hatching in the Northern Province only during the last half of the month. All "hopper" hatches were destroyed. The infestation was light in 1961, with a total of 143 swarms recorded. "Hopper" hatching was limited to the Northern and Khartoum Provinces.

TREE LOCUST (Anacridium moestum) was present in local areas of the Blue Nile, Khartoum, Kordofan and Darfur Provinces from January through April. The locust appeared again in the Darfur Province in August and September and along the White Nile River south of Khartoum in October. Control activities in the acacia forests (source of gum arabic), during the spring of 1961, controlled most of the tree locusts. Treatments were again being carried out in November in all infested areas near the cotton schemes, some of which were invaded, but without serious damage. A MIGRATORY LOCUST (Locusta migratoria migratorioides), which has not been seen since the summer of 1958 in Sudan, appeared during October in the durra fields of the Gebel Dali district of south central Sudan. The infestations varied from field to field over a wide expanse of area. Prompt control operations prevented them from causing much serious damage.

DURRA STALK BORER (Sesamia cretica) was widespread in durra (sorghum) fields. Sugarcane in the Blue Nile Province was heavily infested; however, no control measures were carried out. A NOCTUID (Heliothis sp., probably armigera) infested durra heads in the milk stage in fields at Suki during September. Approximately 30 percent of the grains in some fields were seriously damaged before the infestation was controlled. Bean crops along the Nile River to the north were also infested early in the season by this noctuid, but damage was intermittent. BEET ARMYWORM (Spodoptera exigua) caused the loss of one cutting of Egyptian clover at Shendi schemes, but was generally light in most of the remainder of northern Sudan. An APHID (Aphis sacchari)* was present on durra in the Managil Extension very early in the year. DURRA APHID (Aphis sorghi) was reported, but attacks were very light in central Sudan. APHIDS in pulse crops (legumes) ruined some fields in the Northern Province. Severe attacks on pulse crops were recorded from areas of Equatoria Province. A WHITEFLY was heavy in pulse crops in the Khasim El Ghirba scheme and in several other widely spaced regions in northern Sudan. EGYPTIAN COTTONWORM (Prodenia litura) ruined a number of broadbean fields in the Northern Province along the Nile River during January before being brought under control by treatments. SPOTTED ALFALFA APHID (Therioaphis maculata)* and Aphis craccivora* were present in many Egyptian clover fields along the Nile River north from Khartoum during February and March. Many parasitized aphids were found, and the parasites apparently kept the infestation in check as no damage was reported. GRASSHOPPERS were general in all cultivated areas but little damage was reported, except in Khasim El Ghirba, where bean fields were treated. SUDAN PLAGUE GRASSHOPPER (Aiolopus savignyi) was seen in Blue Nile River areas, but was very light. A COTTON STAINER (Dysdercus superstitiosus) and a FLEA BEETLE caused some damage to kenaf trials near Tonj. THRIPS damaged peanuts in the Gedarif area. TERMITES (Macrotermes herus and Odontotermes sudanensis)* were serious pests in the Khasim El Ghirba district on peanuts.

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* Identified by L. M. Russell.

Cotton Insects: COTTON JASSID (Empoasca lybica) is the most important cotton insect pest in the Sudan. In 1961, attacks in the Gezira area were found in pockets and were initially high. In the Blue Nile and White Nile River regions, attacks were sporadic and high in some local areas only. The Gash and Tokar regions were not affected. The infestation became widespread the latter part of September. Control operations, still in progress in November, successfully controlled the jassid to where almost no damage to the crop occurred. The total acreage treated was expected to amount to about one million acres at the end of the season. A WHITEFLY (Bemisia tabaci) is the second most important cotton insect pest. Initial attacks were high in localized areas of the Gezira, Blue Nile River and White Nile River regions. No damage has resulted from this pest due to successful control operations carried out in conjunction with jassid control. A heavy attack in June on early cotton in the Shendi district was controlled when about 2,000 acres were treated. COTTON APHID (Aphis gossypii) was present in small numbers in several areas of Equatoria Province and in the Gedarif area. Several fields near Kosti were successfully treated for the insect. A COTTON THRIPS (Hercothrips fumipennis) caused some damage in the Sennar district. A FLEA BEETLE (Podagrica puncticollis) damaged about 5,000 acres of seedling cotton in the Gedarif district; 300 acres had to be replanted. Attacks were very light in the Gezira and Blue Nile River regions. Control operations carried out simultaneously with survey from July to September in the Nuba Mountains controlled a COTTON STAINER (Dysdercus sp.) which was serious in local areas. Damage has been very light. Only a trace of EGYPTIAN COTTONWORM (Prodenia litura) was found on cotton in the Abdel Magid scheme near Gedarif. COTTONSEED BUG (Oxycarenus hyalinipennis) was reported from Yambio and Nzara, but has been a problem only in the cotton-breeding plots at Shambat. TERMITES slightly damaged about 300 acres of cotton in the Gedarif area. Light attacks of TREE LOCUSTS (Anacridium moestum) occurred in several cotton fields along the White Nile River during October. BEET ARMYWORM (Spodoptera exigua) destroyed approximately 260 acres of cotton at Tokar. Several other fields in the area were also severely damaged by beet armyworm. COTTON LEAF ROLLER (Sylepta derogata) increased over 1960 in the Nuba Mountains, and COTTON STEM BORER (Sphenoptera gossypii) was reported in the Gash River delta and at Nzara in Equatoria Province. A MIRID (Helopeltis sp.) caused slight damage at Yambio and at Nzara.

A RED BOLLWORM (Diparopsis watersi) was present in Equatoria Province, the Gash River area and the Nuba Mountains on cotton. Clean cultivation and destruction of all trash, plus flooding in the Gash River area, has kept this bollworm in check. SPINY BOLLWORM (Earias insulana) was present at Yambio, Gedarif and Shambat, but was held in check by clean cultivation. No PINK BOLLWORM (Pectinophora gossypiella) damage was reported through November, except at Shambat and at Yambio. This is a late season insect in the Sudan and damage may have occurred in late December 1961 and January 1962. Heat treatments of all seed, and clean cultural practices, help keep pink bollworm under control. A BOLLWORM (Heliothis armigera) was reported at Gedarif and Yambio. During late October and early November, several fringe areas of Sennar, Kosti and Duem districts reported heavy attacks, with up to 15 percent of the bolls damaged in some fields. Usually damage is less than 5 percent. Some heavy boll shedding was reported in other fields. These schemes were all treated and incidence of infestation dropped to one percent or less. The heavy infestation was limited to the fringe areas where clean cultivation methods may have been lax.

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* Identified by T. E. Snyder.

*Citrus and Other Fruit Insects*: A FRUIT FLY (*Pardalaspis* sp.) was again serious in most of the guava fruit and in some citrus in the Northern Province. Control activities were conducted along the Nile River. COCCIDS on citrus were reported from many parts of the Sudan. Mango trees in the Northern Province were treated to control *Lepidosaphes tapleyi** and SPIDER MITES. BLACK APHIDS were common in all citrus regions, with heavy infestations being present in Kassala Province early in 1961. These were treated. GRASSHOPPERS, attacking young lemon trees in the Khasim El Ghirba district, were also controlled. A LEAF MINER in citrus caused some damage in Northern and Kassala Provinces. Several schemes were treated. Light attacks of MEALYBUGS were found on pineapples in Equatoria Province and on citrus in Blue Nile Province. A TERMITE (*Odontotermes sudanensis*)* infested date palms in the Dongola Merowe district, seriously attacking about 35 percent of the palms. About 200,000 palms were treated to control this termite. Also found on date palms in the Dongola Merowe district was PARLATORIA DATE SCALE (*Parlatoria blanchardi*), but attacks were light. A WHITEFLY (*Siphoninus granati*)* was found on pomegranates at Kassala. THRIPS injury was reported on lemon fruit in Equatoria Province. HAWK MOTH larvae damaged several small grape plots in the Khartoum area.

*Vegetable Insects*: RED PUMPKIN BEETLE (*Raphidopalpa foveicollis*)* on beans and cucurbits, a PENTATOMID (*Agonoscelis versicolor*)* on beans and cucurbits, and a FRUIT FLY (*Dacus* sp.) on cucurbit fruits, all caused considerable damage and were the most serious vegetable pests. In the northern area, a PENTATOMID (*Aspongopus viduatus*)* attacked many melon and cucurbit fields. FLEA BEETLES and a FRUITWORM (*Heliothis armigera*) severely attacked okra in many places. Other insect pests of vegetable crops reported were a SWEETPOTATO WEEVIL (*Cylas puncticollis*) on sweetpotato, TWELVE-SPOTTED MELON BEETLE (*Epilachna chrysomelina*)* on cucurbits and RED-BANDED THRIPS (*Selenothrips rubrocinctus*)* on beans.

*Stored-product Insects*: KHAPRA BEETLE (*Trogoderma granarium*) is the most important insect pest in the Sudan from an International aspect and is present in much of the country. RICE WEEVIL (*Sitophilus oryzae*), LESSER GRAIN BORER (*Rhyzopertha dominica*), RICE MOTH (*Corcyra cephalonica*), CONFUSED FLOUR BEETLE (*Tribolium confusum*) and RED FLOUR BEETLE (*T. castaneum*) were found in varying degrees in most places where grain and cereals are stored. Also present in many districts were CADELLE (*Tenebroides mauritanicus*) and ANGOUMOIS GRAIN MOTH (*Sitotroga cerealella*). A WEEVIL (unidentified) has been reported infesting stored-tobacco bales.

*Castorbean Insects:* WHITEFLIES, GRASSHOPPERS, a STEM BORER (*Sphenoptera* sp.), a SPIDER MITE (*Eutetranychus orientalis*), a LEAFHOPPER (*Erythroneura* sp.), LIMA-BEAN POD BORER (*Etiella zinckenella*), NOCTUIDS (*Spodoptera exigua*, *Prodenia litura*, *Grammodes congentia*, *G. geometrica*) and a CASTORBEAN CATERPILLAR (*Achaea catella*) were all reported on castorbeans in the Gash delta. Of these, *A. catella* and *G. geometrica* were the most abundant and caused damage to volunteer castorbean plants. During September, a PHORID (*Megaselia* sp.)* and a CHALCID (*Brachymeria euploeae*)* were found in great numbers parasitizing *A. catella* and *Grammodes* spp. Apparently this kept the infestation from developing further and only very light damage was caused. GRASSHOPPERS near Aroma were baited to prevent damage to castorbeans. Several hundred areas on the Aliab scheme were severely attacked by unidentified caterpillars, probably *Achaea catella*, and at the Hodeiba scheme another 200 acres of castorbeans had to be replanted due to caterpillar damage.

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* Identified by specialists in the U. S. National Museum.

*Coffee Insects*: Light attacks by COFFEE BERRY BORER (*Stephanoderes hampei*) were reported in many of the older coffee plantations of Equatoria Province, but none were reported in the newer plantings.

## Summary of Insect Conditions in Libya

Prepared by R. L. Linkfield and A. Damiano

*Cereal and Forage Insects*: There were no reports of DESERT LOCUST (*Schistocerca gregaria*) in 1961. APHIDS (*Toxoptera graminum*, *Rhopalosiphum padi*, *R. maidis* and *Cavahyalopterus* sp.) were first observed on small grains in January. Infestations of SPOTTED ALFALFA APHID (*Therioaphis maculata*) were very light; but another APHID (*Aphis* sp.) was heavy on alfalfa. EGYPTIAN COTTONWORM (*Prodenia litura*) was very heavy on alfalfa and other crops. Infestations were reported for the first time in Sorman and Homs. ALFALFA WEEVIL (*Hypera postica*) caused considerable damage to the first cutting of alfalfa in Tripolitania.

*Fruit and Olive Insects*: Due to ideal weather conditions in 1961, OLIVE FRUIT FLY (*Dacus oleae*) caused severe damage to the abundant olive crop. Control measures were conducted wherever possible. BLACK SCALE (*Saissetia oleae*) was very heavy on olives in Misaurata and Zavia. A SCOLYTID (*Phloeotribus scarabeoides*) caused appreciable damage to olives in Tripolitania. ALMOND BUG (*Monosteira unicostata*) attacked pears in some areas and was very heavy on almonds. CODLING MOTH (*Carpocapsa pomonella*) caused very heavy damage to apples, pears and quince. In April and May, heavy infestations of MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) were observed on peaches and pears in the Tripoli area and on apricot fruits along the Tripolitania coast.

*Citrus Insects*: Punctures of the MEDITERRANEAN FRUIT FLY on early orange varieties were first observed in July. Populations in 1961 were extremely high and all tangerines not treated were totally destroyed. Infestations of TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) were reported in January and heavy populations caused considerable damage. A MITE (*Brevipalpus obovatus*) was very heavy on lemon trees, especially in Tajura and El Myra. DICTYOSPERMUM SCALE (*Chrysomphalus dictyospermi*), BLACK PARLATORIA SCALE (*Parlatoria zizyphus*) and CHAFF SCALE (*P. pergandii*) were present in many groves. BLACK CITRUS APHID (*Toxoptera aurantii*) was serious in some citrus groves in Tripolitania.

*Vegetable Insects*: EGYPTIAN COTTONWORM (*Prodenia litura*) attacked most vegetable crops (tomatoes, potatoes, etc.), causing considerable damage. A NOCTUID (*Heliothis armigera*) was common on early tomatoes and beans in the Tripoli area. CABBAGE APHID (*Brevicoryne brassicae*) caused heavy damage in January, and DIAMONDBACK MOTH (*Plutella maculipennis*) occurred as medium infestations. ONION THRIPS (*Thrips tabaci*) was very heavy on onions and garlic,and MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) began attacking peppers in June, causing severe damage to all plantings. High populations of MELON APHID (*Aphis gossypii*) and *Aphis* sp. caused severe damage to watermelons in all cultivated areas of Tripolitania.

*Other Field Crop Insects*: A PYRALID (*Phycita* sp., probably *diaphana*) defoliated castorbeans in many areas. Light infestations of a CUTWORM (*Agrotis segetum*) and very heavy infestations of POTATO TUBERWORM (*Gnorimoschema operculella*) were recorded on tobacco.

Ornamental Insects: OLEANDER APHID (*Aphis nerii*) was quite heavy on oleander plantings around Tripoli, and SWEETPOTATO WHITEFLY (*Bemisia tabaci*) did some damage to poinsettias. A LYMANTRIID was very heavy again in 1961 on *Acacia horrida*, completely defoliating the trees. ROSE APHID (*Macrosiphum rosae*) was quite heavy on roses. Two other aphids, *Cinara* sp. and *Eulachnus tuberculostemmata*, were found on pine trees in Tripoli. (Last three species determined by L. M. Russell).

Stored-product Insects: MEDITERRANEAN FLOUR MOTH (*Anagasta kuhniella*), GRANARY WEEVIL (*Sitophilus granarius*), RICE WEEVIL (*S. oryzae*), LESSER GRAIN BORER (*Rhyzopertha dominica*), CONFUSED FLOUR BEETLE (*Tribolium confusum*), RED FLOUR BEETLE (*T. castaneum*), YELLOW MEALWORM (*Tenebrio molitor*), CADELLE (*Tenebroides mauritanicus*), SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) and ANGOUMOIS GRAIN MOTH (*Sitotroga cerealella*) were found infesting stored grains at varying degrees of intensity.

Beneficial Insects: A BRACONID (*Ecphylus* sp.) was reared from a scolytid on olives. The following parasites were reared from *Pieris rapae*: A BRACONID (*Apanteles glomeratus*), a CHALCID (*Brachymeria femorata*) and a PTEROMALID (*Pteromalus puparum*). (All these parasites determined by C. F. W. Muesebeck and B. D. Burks).

## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

## VESPEROS (Vesperus spp.)

Economic Importance: This genus of Cerambycidae is known to attack many economically important plants in the Mediterranean area. Severe larval damage has been recorded on a number of crops which include grapevines, olive, and a variety of garden and ornamental plants. At least 17 species and varieties of the genus Vesperus have been recorded in Europe and northern Africa, but the ones most often mentioned in the literature are V. luridus Rossi, V. strepens (F.) and V. xatarti Dufour. However, no representatives of the genus have been recorded in the Western Hemisphere. Due to the long larval development period, survey for the pest is rather difficult. Young nursery stock and vineyards may suffer considerable root damage during the final year of the larval development period. Various controls have been recommended, including fumigation, soil treatment with insecticides, collecting the larvae by means of deep cultivation, and the use of trap crops such as peas and beans around or across the rows.

Distribution: Vesperus luridus has been recorded in Spain, Portugal, France and Italy; and V. strepens and V. xatarti in Spain, France and Italy. In addition to the above-named species, representatives of the genus have been reported in Algeria, Crete, Morocco and Turkey (Smyrna); one or more species in each country. A total of 8 species has been recorded in Spain alone.

Hosts: Larvae attack any herbaceous plant and many shrubs and trees. There are records on fruit plants, ornamental plants, oaks and pines, and particularly on meadows with medicinal herbs; on garden plants, especially on vegetables and vines.

Life History and Habits: The biology of V. strepens as studied in Italy is as follows: The adults are nocturnal and begin appearing at dusk from August until October. During daylight hours and the cold hours of night they remain hidden in protected places. The female deposits hundreds of eggs near roots of a tree,under dry grass, in crevices of a tree trunk, or around the stems of grasses; preferably in areas where the soil is soft and loose. Upon hatching, young larvae immediately dig deeper into the soil in search of food. At first they feed on young tender roots, but, as they grow rapidly, they soon attack the larger roots of woody plants. Larvae move from one plant to another by means of tunnels which may be 12-18 inches deep in cultivated soil and 6-8 inches in uncultivated soil. Normally, larvae are found grouped together in considerable numbers. Depending upon the region, larvae require 3-4 years to complete their development. Larval activity occurs twice a year - once during the spring and once during the fall. During the summer and winter they usually aestivate. Pupation takes place in earthen cells during July below the larval habitat, and subsequent adults come to the soil surface in early August, using the larval tunnels. Afterwards, adults dig, for their use, a hole in the ground that is characterized by raised edges.

Description: ADULTS - Body elongate and coriaceous. Head and sternum a rusty yellow-brown; other parts pale yellow. Sternum rounded and smooth on sides and tapered toward front. Legs elongated and pubescent. Illustrations of male and female adults of Vesperus luridus, V. strepens and V. xatarti may be seen on following page. The male in each case has longer antennae and is smaller in size. EGGS - Small, white and elongate. LARVAE - Mature forms characteristically different from all other Cerambycidae. Body short and strongly conical, almost cubical, with 4 distinct surfaces. Ventral surface plane; dorsal surface strongly convex, almost cut off in rear; lateral surfaces slightly rounded. Entire body yellowish-white and covered with pale pubescence. Head and prothorax prominently developed and meloid-like; mandibles black at apex.

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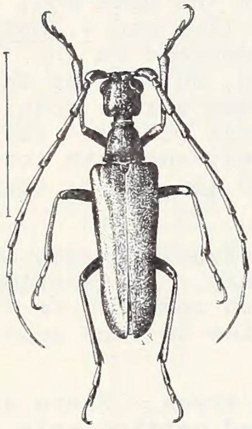
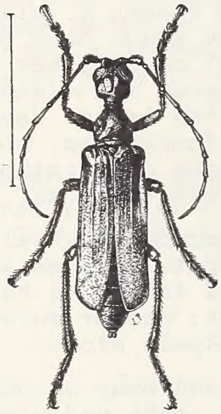
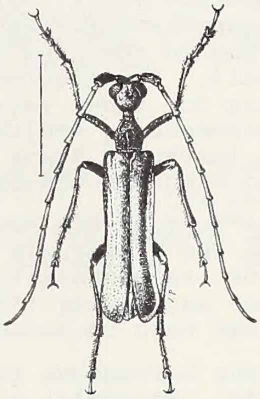
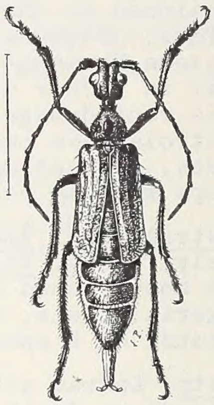
(Cerambycidae, Coleoptera) No. 142 of Series

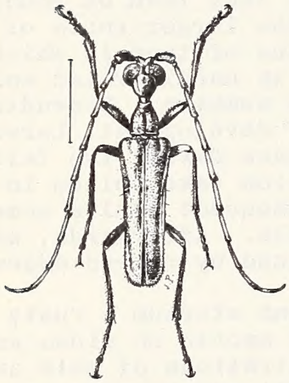
First 6 abdominal segments with transverse band consisting of fine granules, and another band with pale pubescence along posterior margins. Legs strong and ciliate. Length 18-21 mm. Young larvae cylindrical and have long, lateral bristles. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(4):1-26-62.

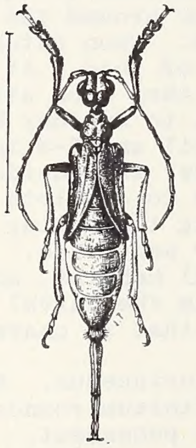

Vesperus strepens
(male)

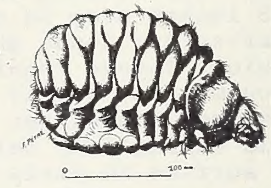

Vesperus strepens
(female)


Vesperus xatarti
(male)


Vesperus xatarti
(female)


Vesperus luridus
(male)


Vesperus luridus
(female)


Larva of Vesperus xatarti

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Figures: Larva from Balachowsky and Mesnil, and adults from Planet.

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